DISTRIBUTION, HABITS AND SEXUAL DIMORPHISM OF THE WESTERN GRASS-WREN *AMYTORNIS TEXTILIS BALLARAE* CONDON IN NORTH-WESTERN QUEENSLAND.

R. K. CARRUTHERS
Consolidated Goldfields Australia
W. HORTON
Mount Isa Mines Pty. Ltd.
D. P. VERNON
Queensland Museum

ABSTRACT

Males of *A.t. ballarae* Condon, 1969, described from females differ from the type in plumage colouration. Observations have been made of this subspecies in the Mount Isa district, and habitat, behaviour, nest and call notes are described and distribution discussed.

Keast (1958) has given the northern and eastern limits of distribution of *Amytornis textilis* (Dumont) as the Macdonnell and James Ranges in the Northern Territory. Therefore the sighting of a Grass-Wren in Argylla Ranges near Mary Kathleen in 1966 was an important extension of known range and an additon to the list of birds in Queensland.

The sighting was confirmed when an adult female specimen was collected by Carruthers in July 1966 at Ballara near the location of the first sighting. On the basis of this specimen, Qd Mus. O10692, and a second specimen, Qd Mus. O11011, Condon (1969) has given subspecific status to this northwestern Queensland population with the name *Amytornis textilis ballarae.*

Observations and detailed study of this northeastern race of the Western Grass-Wren continued throughout 1967 and 1968. Subsequent collection of two adult male specimens by Carruthers has revealed marked sexual dimorphism. Examination of the holotype,

paratype and the two male specimens together with field observations on nesting habits and habitat preferences have been made.

The findings of this field study by R. K. Carruthers and W. Horton together with a description by D. P. Vernon of the first two male specimens collected in Queensland and a table of weights and measurements is presented in this paper.

Amytornis textilis ballarae Condon

Amytornis textilis ballarae Condon, 1969, pp. 205-6.

Material Examined

Adult female, 6 miles S. of Mary Kathleen, near Ballara copper mine, 17 July, 1966, Qd Mus. O10692, holotype.

Adult female, Sybella Creek, 12 miles SSW. of Mount Isa, 27 October, 1966, Qd Mus. O11011, paratype. This specimen compares closely in both dorsal and ventral plumage with the holotype.

Adult male, near Mica Creek, 6 miles SW. of Mount Isa, M.R. 139°27′E., 20°50′S., 23 March, 1968, Qd Mus. O11078.

Adult male, ½ mile N. of Mount Isa–Cloncurry road, 8 miles E. of Mount Isa, 6 April, 1968, Qd Mus. O11079.

Description of Males:

The two specimens are considered adult, their skulls being fully ossified and the gonads large (5 × 3 mm).

The dorsal plumage of the back and rump agrees with the holotype in general colour ("Liver Brown" of Ridgway, 1912, pl. XIV, see Condon, 1969). The dorsal plumage of the tail of all four specimens is dark brown, ("Chestnut Brown" of Ridgway, 1912, pl. XIV), with the edges of each feather paler brown on the ventral surface. The four specimens all show slight but definite barring on the under tail coverts. These feathers are ochraceous to light brown, barred umber brown.

Marked sexually dimorphic characters are obvious on study of the ventral plumage, (see pl. 28, fig. 1). Condon (1969) says "In all subspecies females are more rufous on the flanks than males". This dimorphism is most obvious in *A. t. ballarae* as the two male specimens differ from the holotype in that the flanks are not rufous but pale grey, ("Pale Smoke Grey" of Ridgway, 1912, pl. XIV). The mid-breast and central belly feathers of the males are ochraceous ("Deep Olive–Buff" of Ridgway, 1912, pl. XL), being lightly but distinctly barred umber brown, whereas this character is not evident in the holotype and only slightly evident in the paratype. The base of the bill of the two male birds are bluish grey ("Deep Gull Grey" of Ridgway, 1912, pl. LIII), which merges to dark umber

brown whereas in the females the base is "dark grey". The upper mandibles of all four specimens are dark umber brown.

The two male specimens are larger than the females as is shown in Table 1.

TABLE 1

MEASUREMENTS IN MM AND WEIGHTS IN GM OF SPECIMENS OF *A.t. ballarae*

Sex	Specimen	Total length	Wing-span	Tail length	Wing	Tarsus	Culmen exposed	Culmen total	Weight
Females	O10692	147	180	75	60	23	10.4	14	—
	O11011	159	171	76	59	23	10.4	14	19
Males	O11078	163	191	79	59	25	10.5	14.5	22.6
	O11079	168	189	80	61	25	10.5	14	22.2

OBSERVATIONS

The Grass-Wren was first seen in Queensland by Mr. and Mrs. W. Horton on 2 July 1966, 12 miles south of Mary Kathleen among rocks beside the bush track to Ballara. This area has an open woodland vegetation of Snappy Gum (*Eucalyptus brevifolia*) and Spinifex (*Triodia* spp.), with steep hills and rock outcrops of dark, strongly metamorphosed acid and basic volcanics which on weathering tend to form ridges of piled "tors" in a similar manner to granite. On a second visit to this area on 15 July 1966 a single bird and a flock of eight to ten birds were seen and one specimen collected. This specimen, Qd Mus. O10692, is the holotype of *A. t. ballarae*.

On 7 August 1966 a nest of *A. t. ballarae* with one egg was discovered near Brown's Waterhole on Sybella Creek about 12 miles SSW. of Mount Isa. This area is less rugged than Ballara, with rolling hills and considerably less outcrop. The vegetation is similar but the Spinifex is shorter and more open. Photographs of the nest and the parents in the vicinity of the nest were obtained on 13 August and during this period the egg hatched. Other observations were made of the nesting birds on 21 and 28 August 1966. The young bird had left the nest by the 28th but was still in the area with the parents.

Subsequent sightings are listed below:

September 1966: Sybella Creek 1 mile west of Brown's Waterhole; rugged granite country with varied vegetation of stunted Snappy Gum, Western Box,

(*Eucalyptus argillacea*), Silver-leafed Box (*E. pruinosa*), a varied shrub layer of *Acacia*, a number of unidentified species and a grass layer of dense Spinifex.

October 1966: Sybella Creek, female collected Qd. Mus. O11011; young bird caught by hand and banded.

1967: Several sightings in range of hills between Sybella Creek and Mount Isa, west of the Golf Club.

February 1967: 100 miles ESE. of Mount Isa, granite rock, less rugged than at Sybella Creek with woodland of Snappy Gum and Spinifex.

August 1967: Thorntonia Station, 90 miles NW. of Mount Isa; hilly limestone area with restricted rock outcrop; Snappy Gum-Spinifex woodland; unconfirmed sighting, S. H. Midgley.

March 1968: Sybella Creek, 12 miles SW. of Mount Isa.

23 April 1968: ½ mile north Mount Isa–Cloncurry road, 8 miles east of Mount Isa, male collected Qd Mus. O11079, rugged country.

1 June 1969: Kennedy's Creek, ¼ mile SSW. of Mount Isa; pair seen in rugged gully.

Probably the area of highest population density found was a section of quartzite ridges about 6 miles SSW. of Mount Isa. Mica Creek cuts a sharp "V" valley through these north-south ridges. The nature of the rock and angle of bedding has permitted the secondary drainage systems to cut a series of sharp gorges between the ridges. Unlike many other areas where the Grass-Wren has been found, the rocks here were light coloured, verging from off-white to light grey or light brown quartzites and shales with numerous pure white quartz intrusions.

While the species is apparently able to live without access to water, the existence of near permanent springs in the Mica Creek environs could be one reason for the concentration. However, they have never been observed in the immediate vicinity of the springs.

Distribution in Northwestern Queensland

From the sightings obtained it has been concluded that *A. t. ballarae* will be found throughout the rugged hilly Spinifex country of northwestern Queensland (fig. 1). Because of variations in the nature of the country, distribution is not uniform and probably is not continuous. Very thorough and widespread examination has revealed no indication of the species in the flat to gently sloping mature valley floors even where dense Spinifex exists.

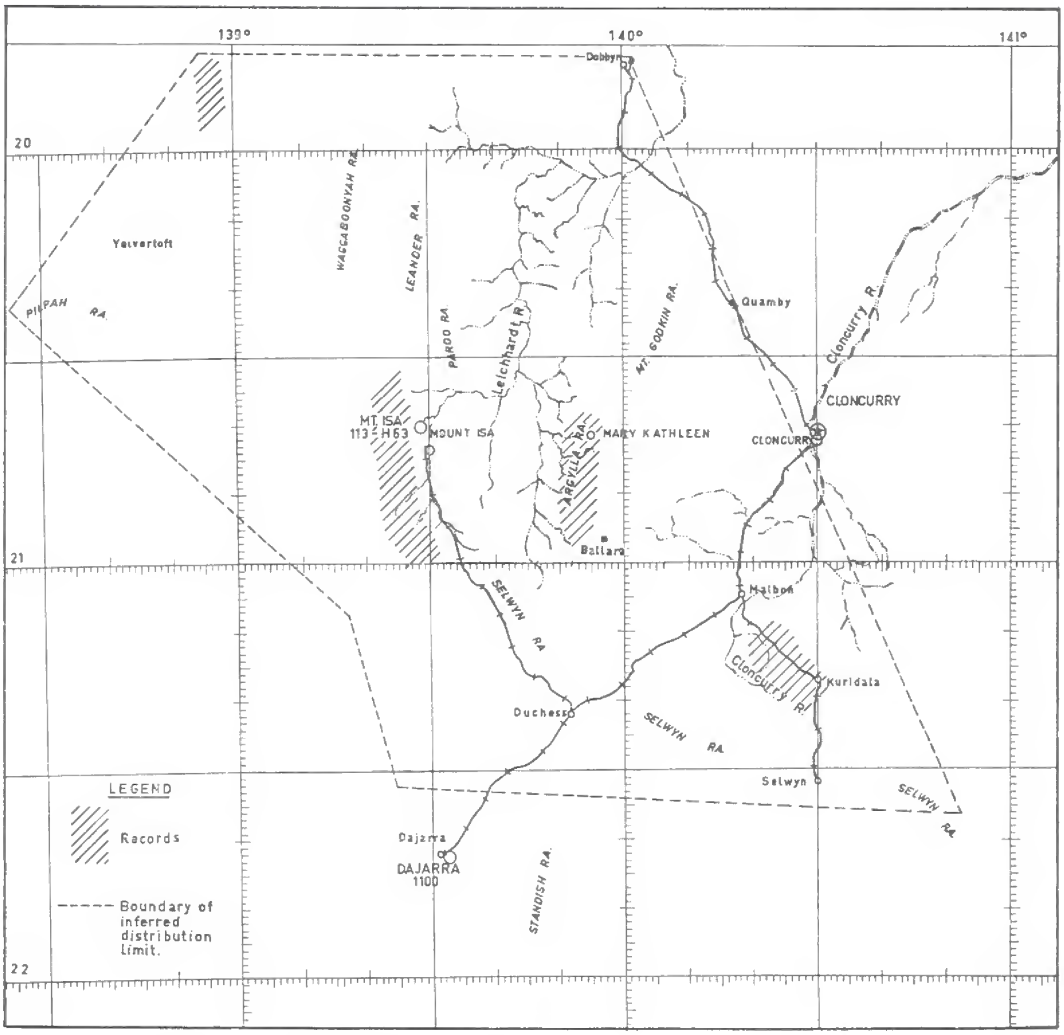

FIG. 1: Observed and inferred distribution of *A.t. ballarae*.

Human activity does not appear to have affected distribution to date, although fire could pose a serious threat. Several areas of apparently ideal habitat were examined twelve months after major fires had passed through, without finding any trace of the Grass-Wrens.

BEHAVIOUR

The Mount Isa race appears to be similar in behaviour to other members of the species and the family. It has an erect wren-like stance (pl. 28, fig. 2) and is normally terrestrial. Occasionally it will perch in a low bush, probably to obtain a better view, particularly

where the terrain is flat. It tends to hop rather than fly and this is very noticeable when it is in rough country and when it is moving up-hill. In areas of piled "tors" and broken rock it will run through internal crevices and travel for a considerable distance through the rock piles. Travelling down the slopes it more frequently flies, covering up to 70 yards in a flight. When pursued it scurries like a rat, tail down and with great speed through the Spinifex. It is very difficult to follow. Solitary birds are occasionally seen but it is more usual to see pairs or small parties of four to ten birds.

Nesting

In the Mount Isa district, nesting occurs in the period late July to September or October. With the breeding pair observed, nesting, started in late July 1966 some four months after the last appreciable rain. Good rain did fall in late August 1966 and some nesting took place following this rain but there is no evidence to suggest that the rain provided the stimulus. The Variegated Wren, *Malurus lamberti*, and the Spinifex-bird, *Eremiornis carteri*, also nest in the period July to October, but do not depend on rain as a breeding stimulus. The nest described was found one mile west of Brown's Waterhole near Sybella Creek. It was constructed of a mixture of grasses neatly lined with fine grass. The entrance was on the up-hill side shielded by Spinifex spines and faced south. The nest was roomy and the top was sufficiently thick to provide a complete shield from the sun. In this latter respect, this differs from the nest of *A. textilis* described by Serventy and Whittell (1962, p. 332).

The nest was situated in a Spinifex clump about 5 feet from the base of a Snappy Gum and received shade after noon. The birds always approached the nest from the ground and while under observation each approach tended to be from a different direction. Frequently they approached through the Spinifex clump itself. Exit from the nest was always rapid, usually by a long hop to the ground. With the young in the nest, visits were infrequent and 30 minute absences were common. Both parents took part in feeding the young. There is an abundance of insects and spiders all the year, particularly in the Spinifex. Insects were de-winged on a rock before feeding to the chick, and after feeding both birds were seen to remove the faecal sacs. Very occasionally one of the birds sat in the nest for 20 or 30 minutes.

Call Notes

The most common call, probably a feeding call, is a faint high-pitched peep or squeak. This is normally heard before the birds are seen. It makes a somewhat louder but similar squeak when first alarmed but once thoroughly alarmed it often remains completely silent. On several occasions, it has been heard to give a complex, most attractive and reasonably loud song which has resemblance to the song of the Weebill or Mistletoe-bird but includes two sharp louder final notes somewhat reminescent of the Rufous Whistler. This song may only be given by the male. On several occasions the birds have responded to squeaking calls allowing very close observation.

Discussion

The discovery of this isolated northwest Queensland population of *A. textilis* opens up the question of further extensions of range of the species. Without confirmation Keast (1958) would not accept "the 'sight' records of Keartland (1904) for the Margaret R. in the north-west of Western Australia nor those of Jarman (see Condon 1951) for Barrow Creek in Central Australia". However these should now be accepted as highly probable. Jarman (1953) records specimens observed at Standley Chasm, Palm Valley and near Ayre's Rock and Shane Parker (pers. com.) reports that sightings have recently been obtained of a cinnamon-breasted race from the vicinity of Tennants Creek.

With the preference shown by the northern and eastern races of *A. textilis* for rugged Spinifex country the following are suggested as areas where it is likely that other populations exist.

(1) Reynolds Range — 100 miles N.N.W. of Alice Springs.

(2) Fosters and Watt Ranges — Barrow Creek area.

(3) Murchison and Davenport Ranges — N. and E. of Wauchope.

(4) Fergusson, Harts and Jervois Ranges — E. of Alice Springs.

(5) Tarlton, Adam, Cairns and Toko Ranges — 200 to 300 miles ENE. of Alice Springs.

It is of interest to note that the Fergusson, Harts, Jervois, Tarlton, Adam and Toko Ranges probably at one time formed a connecting habitat link between the Central Australian ranges and the north west Queensland highlands. This is now cut by the senile Georgina valley but appears to be the most likely migration route for the ancestral stock of *A. t. ballarae*.

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